

Part

H

Relationship of Individual THPs to the SYP/HCP

Relationship of Individual THPs to the SYP/HCP

All measures here represent interim prescriptions. These interim prescriptions may be modified for portions of PALCO's ownership after completion of watershed analysis studies. Watershed analysis is designed to use additional data and studies to develop site-specific mitigation measures. Such site-specific mitigations are customized for the different conditions on PALCO's ownership, and are therefore superior to the "one size fits all" approach to mitigation embodied within the interim prescriptions.

WATERCOURSE RULES

The measures prescribed for watercourses in this SYP/HCP differ from the standard protection measures with regard to zone width and canopy retention. The following is supplied in order to comply with 14 CCR 916.1 *In Lieu Practices*. THPs submitted under this SYP/HCP will reference the following discussion, to demonstrate compliance with this rule section.

Class I Watercourse Protection

A. Standard Rule

1) 14 CCR 916.5 Table I requires zones which range in width, depending on sideslopes, from 75' to 150'. 14 CCR 916.4(b)(5) allows the RPF or the director to increase or decrease the zone width.

2) 14 CCR 916.5(e)"G" requires 50% of the overstory and 50% of the understory canopy covering the ground and adjacent waters to be left in a well distributed multi-storied stand composed of a diversity of species similar to that found before the start of operations. The residual overstory canopy shall be composed of at least that found before the start of operations. The residual overstory canopy shall be composed of at least 25% of the existing overstory conifers. Species composition may be adjusted consistent with the above standard to meet on-site conditions when agreed to in the THP by the RPF and the Director.

B. Explanation and Description

1) The SYP/HCP standards specify a 170' riparian management zone (RMZ), which is equivalent to the watercourse and lake protection zone (WLPZ) regardless of the adjacent sideslopes. This zone is divided into three "bands." The inner band (immediately adjacent to the watercourse) is a restricted harvest band (RHB) and is 30 feet in width. The middle band is a limited entry band (LEB) and is a strip of land that is located between 30 feet and 100 feet from the watercourse. The total width of the LEB is 70 feet. The outer band (OB) is a strip of land that is located between 100 feet and 170 feet from the watercourse. The total width of the OB is 70 feet. Distances are slope distance measurements.

2) The SYP/HCP uses conifer basal area rather than canopy closure to measure tree retention in the WLPZs. No harvesting is allowed in the RHB, except as identified after watershed assessment pursuant to riparian management plans. Trees may be harvested from the LEB, but the pre-harvest band must contain at least 345 square feet of conifer basal area. The post-harvest band must contain at least 300 square feet of conifer basal area. Trees in the OB may also be harvested, but the pre-harvest OB must contain at least 276 square feet of conifer basal area and the post-harvest OB must contain at least 240 square feet of conifer basal area.

C. Differences between Proposed and Standard Practice

1) The difference in width ranges from 20 to 95 feet, depending on the associated sideslopes.

2) The canopy closure retained by requiring a minimum of 345/276 square feet of conifer basal area in the LEB/OB before harvesting may occur will be significantly higher than that required under the standard rule. Use of the proposed basal area retention will likely result in more than 80% crown closure in the areas where harvest may occur, and will not result in a crown closure change where no harvest may occur.

D. Location of Application

1) The 170' WLPZ width will be used on all fish-bearing (including restorable) Class I watercourses on the ownership covered by the SYP/HCP.

2) The basal area requirements specified above will be used on all fish-bearing (including restorable) Class I watercourses on the ownership covered by the SYP/HCP.

E. Explanation and Justification

1) The WLPZ width is larger than specified in the rules, and therefore increases the protection to the watercourses.

2) Use of the basal area measure avoids the problem of the widely varying estimates associated with canopy closure measurements. The minimum basal area retention standards provide an increase in canopy closure in comparison with the standard rules, and therefore provides increased protection to the watercourses.

Class II Watercourse Protection

A. Standard Rule

1) 14 CCR 916.5 Table I requires zones which range in width, depending on sideslopes, from 50' to 100'. 14 CCR 916.4(b)(5) allows the RPF or the director to increase or decrease the zone width.

2) 14 CCR 916.5(e)"1" requires 50% of the total canopy covering the ground to be left in a well distributed multi-storied stand composed of a diversity of species similar to that found before the start of operations. The residual overstory canopy shall be composed of at least 25% of the existing overstory conifers. Species composition may be adjusted consistent with the above standard to meet on-site conditions when agreed to in the THP by the RPF and the Director.

B. Explanation and Description

1) The SYP/HCP standards specify a 100' riparian management zone (RMZ) which is equivalent to the watercourse and lake protection zone (WLPZ) regardless of the adjacent sideslopes. This zone is divided into two "bands." The inner band (immediately adjacent to the watercourse) is a restricted harvest band (RHB) and is 10 feet in width. The selective entry band (SEB) is a strip of land that is located between 10 feet and 100 feet from the watercourse. The total width of the SEB is 90 feet.

2) The SYP/HCP uses conifer basal area rather than canopy closure to measure tree retention in the WLPZ. The SYP/HCP standard specifies that at any location within the SEB, no harvest will occur unless at least 276 square feet of conifer basal area exists prior to harvest. If that standard is exceeded, a minimum of 240 square feet of conifer basal area, also to be determined at any point within the SEB, will be retained. No harvesting is allowed in the RHB, except as identified after watershed assessment pursuant to riparian management plans. Trees may be harvested from the SEB, but the pre-harvest SEB must contain at least 276 square feet of conifer basal area and the post-harvest SEB must contain at least 240 square feet of conifer basal area.

C. Differences Between Proposed and Standard Practice

1) The difference in width ranges from 0 to 50 feet, depending on the associated sideslopes.

2) The canopy closure retained by requiring a minimum of 276 square feet of conifer basal area in the SEB before harvesting may occur will be significantly higher than that required under the standard rule. Use of the proposed basal area retention standards will likely result in more than 80% crown closure in the areas where harvest may occur, and will not result in a crown closure change where no harvest may occur.

D. Location of Application

1) The 100' WLPZ width will be used on all Class II watercourses on the ownership covered by the SYP/HCP.

2) The basal area requirements specified above will be used on all Class II watercourses on the ownership covered by the SYP/HCP.

E. Explanation and Justification

1) The WLPZ width is equal to or larger than specified in the rules, and therefore equals or increases the protection to the watercourses.

2) Use of the basal area measure avoids the problem of the widely varying estimates associated with canopy closure measurements. Setting the minimum conifer basal area standard at 240 square feet per acre provides an increase in canopy closure in comparison with the standard rules, and therefore provides increased protection to the watercourses.

CUMULATIVE IMPACTS ASSESSMENTS

Introduction

This section addresses the manner in which Timber Harvesting Plans (THPs) will comply with the THP “Section IV” requirements contained in 14CCR 912.9 and the Board of Forestry Technical Rule Addendum No. 2 (TRA2). The Plan addresses a broad spectrum of potential impacts to resources as a result of timber harvesting, as well as several other activities. Throughout the Plan, potential impacts of timber harvesting were considered through the planning horizon. Long term projections have been made with regard to past, present and future projects. In order to simplify the THP review process, much of the required information to be addressed will be included in THPs by referencing these long term projections as well as other portions of the Plan.

Identification of Resource Areas

The resource areas required to be identified will be addressed as described in TRA2. Information supplied under this portion of the assessment will not differ from that supplied in THPs submitted prior to implementation of the Plan.

Identification of Information Sources

THPs will reference the Plan, and all sources listed in the Plan will be included by that reference. If, in developing the THP, the Registered Professional Forester (RPF) uses sources not listed in the Plan, those sources will be listed in the THP.

Past and Future Activities

A. Past THPs will be listed in the THP, in the same manner used in THPs submitted prior to implementation of the Plan. The Plan includes, in Volume II Parts E, I & J, Volume III Parts B, C & E, Volume IV Parts B, C, D & E and Volume VI Part A, descriptions of future projects, which are addressed in general terms. THPs submitted after implementation of the Plan will reference those sections. In addition to this reference, projects currently considered “reasonably foreseeable future projects” will be included and listed in the THP.

B. Any known, continuing significant environmental problems caused by past projects, as defined in 14CCR 895.1, will be identified in the THP.

APPENDIX - TECHNICAL RULE ADDENDUM NO.2

A. Watershed Assessment

Cumulative Watershed Effects (CWEs) occur within and near bodies of water or significant wet areas, where individual impacts are combined to produce an effect that is greater than any of the individual impacts acting alone. Factors to consider in the evaluation of cumulative watershed impacts are listed below.

1. Watershed impacts shall be based on significant on-site and down-stream cumulative effects on beneficial uses of water, as defined and listed in applicable Water Quality Control Plans.

The beneficial uses listed and defined in the Water Quality Control Plan for the North Coast Region are listed below:

Municipal & Domestic Supply	Agricultural Supply
Industrial Service Supply	Industrial Process Supply
Groundwater Recharge	Freshwater Replenishment
Hydropower Generation	Water Contact Recreation
Non-Contact Water Recreation	Warm Freshwater Habitat
Cold Freshwater Habitat	Wildlife Habitat
Preservation of Rare &	Migration
Endangered Species	Fish Spawning

1. Impacts to these beneficial uses from timber operations could occur if the operations impact such factors as sedimentation, water temperature, organic debris, chemical contamination or peak flows. These factors are addressed in the Plan in Volume II Parts C, D, E, F, H and P. Mitigation measures derived from these assessments, and through negotiations with the agencies, are provided in the Plan in Volume IV Parts D and E.
2. Watershed effects produced by timber harvest and other activities may include one or more of the following: sediment, water temperature, organic debris, chemical contamination or peak flow. These factors are addressed in the Plan in Volume II Parts C, D, E, F, H and P. Mitigation measures derived from these assessments, and through negotiations with the agencies, are provided in the Plan in Volume IV Parts D and E.
3. Watercourse Condition: The watershed impacts of past upstream and on-site projects are often reflected in the condition of stream channels on the project area. Following is a list of channel characteristics and factors that may be used to describe current watershed conditions and to assist in the evaluation of potential project impacts:

Gravel Embeddedness	- Addressed in Volume II Parts F and H.
Pool Filling	- Addressed in Volume II Parts F and H.
Aggradation	-Addressed in Volume II Parts F and H.
Bank Cutting	- Impacts occurring as a result of bank cutting are addressed in Volume II Parts F and H.
Bank Mass Wasting	- Addressed in Volume II Parts D, F and H
Downcutting	- Impacts occurring as a result of downcutting are addressed in Volume II Parts F and H.
Scouring	- Impacts occurring as a result of downcutting are addressed in Volume II Parts F and H.
Organic Debris	- Addressed in Volume II Parts F and H
Stream-Side Vegetation	- Addressed in Volume II Parts F and H
Recent Floods	- High flows have occurred throughout the ownership most recently in the winters of 1996/1997 and 1997/1998. Impacts related to these types of events are assessed in Volume II Parts F and H.

B. Soil Productivity

Cumulative soil productivity impacts occur when the effects of two or more activities, from the same or different projects, combine to produce a significant decrease in soil biomass production potential. These impacts most often occur on-site within the project boundary, and the relative severity of productivity losses for a given level of impact generally increases as site quality declines. The primary factors influencing soil productivity that can be affected by timber operations include:

Organic matter loss. Significant losses of organic matter can expose topsoil to direct rainfall impact. When bare mineral soil is exposed to direct rainfall impact and/or surface flow, topsoil loss due to erosion can occur. However, in the coastal belt covered by the Plan, organic layer loss is a transitory condition, as rapid regrowth after harvest leads to quick replacement of the organic layer. This is particularly notable following controlled burns. Minimizing the amount of disturbed soil is the most effective method of limiting organic matter loss. Implementation of the Forest Practice Rules (FPRs) with regard to appropriate silviculture, yarding method and road location will minimize the amount of disturbed and exposed soil such that loss of organic matter will not cause significant soil productivity losses.

Soil compaction. Soil compaction in timberland is typically caused by heavy equipment running repeatedly over soils that are partially saturated. Heavy equipment operations under this Plan will be conducted, pursuant to the FPRs, during dry periods. Some compaction will likely occur on skid trails in tractor yarding areas. However the effects of this compaction will be minimal, across the landscape, as tractors operate on a small portion of the yarding areas. In addition, cable yarding, which does not generally result in compaction will be used on much of the land subject to the Plan. No significant adverse impacts related to soil compaction are therefore expected to occur as a result of THPs submitted pursuant to this Plan.

Surface soil loss. Surface soil loss may occur as a result of road and landing construction, skid trail construction, displacement into piles or windrows or mass wasting. Road and landing construction constitute a small percentage of the land subject to the Plan and are therefore not likely to cause a significant reduction of soil productivity. Skid trail construction also affects only a small portion of the property, and will therefore cause a minimal impact to soil productivity. Displacement of surface soil during slash piling or windrowing affects only a portion of the top soil, and is done on a very small percentage of the ownership. This activity will therefore cause a minimal impact to soil productivity. Mass wasting is addressed in Volume IV Part D of the Plan. Mitigation measures are provided which reduce the potential for mass wasting caused by operations. These measures will minimize the potential for mass wasting, and significant impacts to soil productivity are therefore not anticipated.

Growing space loss. The roads to be built pursuant to this Plan will remove very little acreage from production due to their narrow widths. This is addressed in Volume IV Part D of the Plan. Impacts to soil productivity due to growing space loss are therefore not expected to be significant.

C. Biological Resources

1. Rare, threatened and endangered species, including species of special concern are addressed in Volume II Parts K, L, M and N and Volume IV Parts B, C, D & E of the Plan, and will be addressed in the cumulative impacts assessment of each THP by referencing the Plan. The assessment of these species in the Plan complies with the assessment requirements for THPs, and will be considered adequate for that purpose. As the Plan considers potential impacts to these species over a 50-year period, protection measures developed in the Plan for these species will meet the requirements in the FPRs for mitigation of potential cumulative impacts to these species.
2. Significant wildlife and fisheries resource concerns are addressed in Volume II Parts K, L, M and N and Volume IV Parts B, C, D & E of the Plan. The assessment of these concerns in the Plan complies with the assessment requirements for THPs, and will be considered adequate for that purpose. As the Plan considers potential impacts to these concerns over a 50-year period, protection measures developed in the Plan for these concerns will meet the requirements in the FPRs for mitigation of potential cumulative impacts regarding these concerns.
3. The Plan contains specific requirements in Volume IV Part D, which address practices to be employed on aquatic and near-water habitats which apply to THPs and their immediate surrounding areas. The assessment of these habitats in the Plan complies with the assessment requirements for THPs, and will be considered adequate for that purpose. As the Plan considers potential impacts to these habitats over a 50-year period, protection measures developed in the Plan for these habitats will meet the requirements in the FPRs for mitigation of potential cumulative impacts regarding these habitats.
4. The Plan contains specific requirements in Volume II Parts L, M and N and Volume IV Parts B, C & E which address biological habitat conditions, considering such factors as snags and den trees, downed, large woody debris, multistory canopy, road density, hardwood cover, late seral forest characteristics and late seral habitat continuity. The assessment of these habitats in the Plan complies with the assessment requirements for THPs, and will be considered adequate for that purpose. As the Plan considers potential impacts to these habitats over a 50-year period, protection measures developed in the Plan for these habitats will meet the requirements in the FPRs for mitigation of potential cumulative impacts regarding these habitats.

The above requirements for assessment and mitigation of potential cumulative impacts are met with the information and mitigations provided in the Plan. THPs will meet the requirements for biological assessment by referencing Volume II Parts K, L, M and N and Volume IV Parts B, C, D & E in the Plan.

D. Traffic

Traffic Assessment Area - Definition and Rationale

The public roads not part of the logging area on which logging traffic must travel were assessed following the guidelines of 14 CCR 912.9 Technical Rule Addendum #2.

Traffic Assessment

The haul routes used under this SYP/HCP will include the county roads and state highways which lead from the PALCO's timberlands to their mills. These include the following:

State Highways

State Highways 101, 36 and 254

City and County Roads

Greenwood Heights Road, Freshwater-Kneeland Road, Pacific Lumber Camp Road, Old Arcata Road, Cummings Road, Myrtle Avenue, Harrison Street, Harris Street, Elk River Road, Thompkins Hill Road, Palmer Road, Newburg Road, Rohnerville Road, Howe Creek Road, Blue Slide Road, Shively Road, Holmes Road, Monument Road, Dyerville Loop Road, Elk Creek Road, Bull Creek Flat Road and Mail Ridge Road.

Log truck traffic has historically occurred on all these roads, and is currently occurring on most of the roads as well. Continuation of hauling operations at historic or current levels is not expected to cause a significant adverse impact to traffic on these roads.

The above assessment will be reviewed by plan preparors prior to submission of a THP. If the above analysis is adequate for purposes of the THP in question, it will be referenced in the THP. If significant local issues require a more detailed analysis, the THP will contain an anlysis which is specific to that THP.

E. Visual Resources

Visual Assessment Area

The visual assessment area is defined as the project area that is readily visible to a significant number of people who are no further than three (3) air miles from the forest operation. This area was assessed following the guidelines of 14 CCR 912.9 Technical Rule Addendum #2.

Visual Assessment

The majority of the land included in the SYP/HCP has been and will be managed consistent with the management of the surrounding lands. While individual THPs or portions thereof will be in view of communities adjacent to or within 3 miles of the THP, the aesthetics of this plan are consistent with ongoing timberland management in this area. No significant adverse effects to visual resources are expected due to this project.

F. Recreation Assessment

Assessment Area

The plan area and the area within 300' of the project area was considered. This 300' assessment area surrounding the plan was chosen because it offers adequate assessment when considering the sights and sounds of timber operations. Within 300' sights and sounds are greatly diminished due to surrounding vegetation, activities and other physical barriers. The restriction of

recreational activities also led to the selection of this assessment area. The project area is behind locked gates and is not open to the general public. This area was assessed as per CDF guidelines set forth in Title 14 CCR 912.9 Board of Forestry Technical Rule Addendum No. 2, Cumulative Impacts Assessment - Appendix Technical Rule Addendum No. 2

Recreation Assessment

This area is private property and is zoned TPZ. This land is not open to the public for recreational use. Therefore, significant impacts to recreation are unlikely.

SUMMARY

Based on the above discussion, THPs submitted after approval of the SYP/HCP will comply with the requirements of 14CCR 912.9 and Technical Rule Addendum No. 2 as follows:

<i>Requirement</i>	<i>Method of Compliance</i>
912.9 question #1	RPF Professional Judgement
912.9 question #2	RPF Professional Judgement
912.9 question #3	RPF Professional Judgement
Resource Area Identification	RPF Professional Judgement
Identification of Sources	Reference SYP/HCP
Past & Future Activities	Provided in the THP
A. Watershed Resources	Reference SYP/HCP (sections noted above)
B. Soil Productivity	Reference SYP/HCP (discussion above)
C. Biological Resources	Reference SYP/HCP (sections noted above)
D. Recreational Resources	Reference SYP/HCP (discussion above)
E. Visual Resources	Reference SYP/HCP (discussion above)
F. Vehicular Traffic Impacts	Reference SYP/HCP (discussion above)

As discussed above, the RPF will review the SYP/HCP and determine the adequacy of the information provided in the SYP/HCP. If the RPF determines that site-specific conditions require the inclusion of additional information, that information will be included with the THP and addressed as appropriate.

